DOCKET FILE COPY ORIGINAL

National Cable Television Association

Neal M. Goldberg
General Counsel

1724 Massachusetts Avenue, Northwest
Washington, D.C. 20036-1969
202 775-3664 Fax: 202 775-3603

July 7, 1999

Ms. Magalie R. Salas
Secretary
Federal Communications Commission
445 12th Street, SW
TW-A325
Washington, DC 20554

RE: CS Docket No. 97-80

Dear Ms. Salas:

On behalf of the multiple system operators named in paragraph 139 of the Report and Order adopted in the above-referenced proceeding, the National Cable Television Association, General Instrument Corporation and Scientific-Atlanta, Inc., I am submitting an original and nine copies of the second semi-annual Status Report called for in the Report and Order. At the Commission's request, we are also providing a copy in disk form.

If you have any questions concerning this matter, please contact the undersigned.

Sincerely,

Neal M. Goldberg

Neal M. Goldberg

cc: Chairman William E. Kennard
Commissioner Susan Ness
Commissioner Gloria Tristani
Commissioner Michael Powell
Commissioner Harold W. Furchtgott-Roth
Dale Hatfield, Chief, Office of Engineering & Technology
Deborah Lathen, Chief, Cable Services Bureau
Thomas Horan, Cable Services Bureau (w/disk)
Robert Schwartz, Counsel for Circuit City Stores

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Implementation of Section 304 of the	)	CS Docket No. 97-80
Telecommunications Act of 1996	)	
	)	
Commercial Availability of	)	
Navigation Devices	)	

STATUS REPORT

July 7, 1999

TABLE OF CONTENTS

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Implementation of Section 304 of the Telecommunications Act of 1996	)	CS Docket No. 97-80
	)	
	)	
Commercial Availability of Navigation Devices	)	
	)	

STATUS REPORT

Pursuant to the Commission's Report and Order in the above-captioned proceeding, the undersigned multiple system operators ("MSOs"), manufacturers of cable equipment, and the National Cable Television Association ("NCTA") hereby submit the second semiannual progress report called for in the Report and Order.[1]

SUMMARY

The Commission ordered the filing of semiannual status reports to assure itself that the cable industry was making steady progress in meeting the schedule submitted by Cable Television Laboratories, Inc. ("CableLabs") for the development of specifications for a digital security "Point of Deployment" ("POD") module and for a digital security module interface as well as to apprise it of other industry efforts to foster the availability of navigation devices as required by the Report and Order.

---

[1] In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, Report and Order, CS Docket No. 97-80, 63 Fed. Reg. 38095 (July 15, 1998). 13 FCC Rcd 14775 (1998).

We are pleased to report herein that, as was the case with the Status Report filed in January, 1999, CableLabs has once again met the milestone in its proposed schedule for the development of a digital security module and a digital security module interface.

We also report that work has been ongoing to develop a means to separate analog security from non-security functions -- a requirement imposed by the Commission and vigorously opposed by the cable industry for a number of reasons. We have repeatedly advised the Commission that developing an analog version of the digital "POD" would not be reasonably feasible since it would be costly to consumers, uneconomic, and would soon become unnecessary as the transition to a digital communications environment is completed. Moreover, as the Commission knows, the OpenCable™ effort was focused on digital equipment and the Commission's July 2000 deadline for separation of security from non-security functions in all set-tops was based on a cable industry timetable for the digital POD.

In addition, in arguing against application of the separation rules to analog or hybrid boxes, NCTA's initial comments in this proceeding -- filed over two years ago -- cautioned that the FCC "must consider the effectiveness of adopting burdensome rules applicable to a technology that may soon be obsolete which could adversely affect the deployment of new and advanced technologies."[2] And NCTA advised the Commission almost a year ago in its Petition for Expedited Reconsideration that, if the FCC rejected NCTA's proposal to exempt from the separate security rule analog-only boxes and hybrid

[2] Comments of the National Cable Television Association in CS Docket No. 97-80, filed May 16,1997 at 12-13.

boxes where the analog scrambled programming was duplicated on an operator's digital tier, it could not expect the July 2000 deadline to be met for analog or hybrid boxes.[3]

On reconsideration, the Commission granted in part NCTA's petition and concluded that "analog-only" navigation devices would not be subject to the separate security requirement.[4]

We appreciate the Commission's action in exempting "analog-only" boxes from the separate security requirement. Nevertheless, that requirement still applies to "hybrid" boxes -- those which descramble analog as well as digital transmissions.[5]

Since our January report, CableLabs has continued to address the problem of removable security for such hybrid set-top boxes that utilize analog scrambling for signal protection. The goal of the CableLabs' studies was to develop a means of separating analog security so that an external module could serve the same function as the POD module does for digital systems. As the cable industry has told the Commission on a number of occasions, there are numerous problems with this approach, not the least of which is that there are a number of legacy, analog scrambling systems now in use by the cable industry - some which were provided by companies no longer in existence.[6]

In its Petition for Expedited Reconsideration, NCTA proposed to exempt from the analog separate security rule not only operators providing "analog-only" navigation

---

[3] NCTA Petition for Expedited Reconsideration in CS Docket No. No. 97-80, filed August 14, 1998, at n. 37 ("NCTA Petition").

[4] In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, Order on Reconsideration, CS Docket No. 97-80. FCC 99-95, 64 Fed. Reg. 29599 (June 2, 1999) ("Order on Reconsideration").

[5] Order on Reconsideration at ¶ 14; See 47 C.F.R. §76.1204(f).

[6] See, e.g., NCTA Petition at 7-12; Order on Reconsideration at ¶ 8.

devices, but also operators whose subscribers have the option of receiving any scrambled analog programming as digital programming also offered by that operator.[7] Adoption of such an exemption would have virtually eliminated the need for analog separate security modules in "hybrid" boxes, and, at the same time, would have provided another incentive for operators to introduce digital technology, eventually mooting the need for a hybrid box. The Commission did not adopt that proposal.

As discussed below, CableLabs has concluded that the only potentially feasible approach to separating analog security and non-security functions in hybrid boxes is to use either the existing Electronics Industry Association ("EIA") standard EIA-105 "Decoder Interface" or an abridged version of the standard. Including such an interface on hybrid set-top boxes provided at retail would accommodate a connection for an external analog "separate security" module. This module would be provided by the cable operator and would perform the analog descrambling function.

It must be emphasized, however, that any "solution" based on the Decoder Interface standard is troubling. While the standard exists and appears to be the only feasible approach to satisfy the FCC requirements anywhere near the July 2000 Commission deadline, the existing EIA-105 standard is unnecessarily expensive and complex when used solely to separate security from non-security functions in the analog environment.

An alternative course to achieving separation in "hybrid" boxes, discussed below, is to embark on a program to develop a subset of the existing interface and standardization of the resultant specification. This effort would reduce the complexity

---

[7] NCTA Petition at 16-17.

and cost of the interface but would take time and would certainly not be completed in time for manufacturers to meet the July 2000 deadline for "hybrid" boxes. And, as NCTA warned the Commission several times in the course of this proceeding, taking either course of action will divert resources from OpenCable's™ original objective to develop specifications for digital set-top boxes and related equipment.

BACKGROUND

On June 24, 1998, the Commission released its Report and Order in this proceeding implementing Section 304 of the Telecommunications Act of 1996. Section 304 calls upon the Commission to adopt rules to ensure the commercial availability of navigation devices, while not jeopardizing the signal security of an affected multichannel video programming distributor ("MVPD"). As part of that Report and Order, the Commission determined that one means of implementing these twin goals was to separate security (i.e., conditional access) functions from non-security functions and to require that only the non-security functions be made commercially available in equipment provided by entities unaffiliated with the MVPD. The security functions would reside in a separate security module to be obtained from the MVPD.

In its decision, the Commission referenced the ongoing effort of CableLabs, a research and development consortium of cable television system operators representing both North and South America, to develop specifications for both a digital security module and a digital security module interface. As the Commission was well aware, the OpenCable™ effort was focused on cable's digital set-top boxes. Once such specifications are developed and the interface is adopted as an industry standard,

manufacturers can produce digital navigation devices (such as digital cable set-top boxes) with the standardized digital security module interface and make such equipment available at retail. Cable operators would then supply a compatible digital security module to the customer.

In the course of the navigation devices proceeding, the Commission requested from the cable industry a schedule of milestones by which the FCC could monitor CableLabs' progress in meeting the OpenCable™ forecast of September, 2000 for having digital security modules available for cable operators. The schedule submitted to the Commission included milestones for the development of specifications for the digital security module and the digital security module interface. It also included a post-specification time-line for development and production of the digital security module.

The Commission adopted a more aggressive schedule than had CableLabs and ordered that digital security modules be available to cable operators by July (not September) 2000 and applied that deadline not only to digital boxes, but also to analog and hybrid boxes. On reconsideration, the Commission concluded that the separate security requirement would not apply to "analog-only" boxes but would still apply to "hybrid" boxes. The Report and Order also had included (without change) the industry-provided schedule of interim milestones for development of the digital separate security module and specifications for its interface.[8]

Eight multiple system operators involved in the OpenCable™ project had made commitments to that project in a letter to NCTA's President which was submitted for the record in this proceeding. To "assure itself that the schedule was being met," the

---

[8] Id. at para. 77.

Commission ordered those MSOs to file semiannual progress reports with the Commission.[9] The Commission established filing dates of January 7, 1999, July 7, 1999, January 7, 2000, and July 7, 2000, for the MSOs to detail "the progress of their efforts and the efforts of CableLabs to assure the commercial availability to consumers [of navigation devices]."[10] This is the second of those reports.

SPECIFICATIONS FOR THE DIGITAL SECURITY MODULE AND ITS INTERFACE

We are pleased to report that CableLabs has once again met the schedule the cable industry submitted with respect to the development of the digital security module and the digital security module interface.

As for the development of specifications for the digital security module (the POD module), the schedule called for the completion of a specification by December 1998 and, as reported in our first Status Report, that has been accomplished.

With respect to the development of specifications for the digital security module interface, the schedule called for a recommended specification to have been made publicly available and released to the Society of Cable Television Engineers ("SCTE") for adoption as a U.S. standard by December, 1998. As we previously reported, the digital security module interface specification not only was submitted to SCTE by year-end, 1998, but it was also approved by SCTE as a U.S. cable standard in December, 1998.

---

[9] Id. at paras. 81, 139. While only the undersigned MSOs were ordered to submit semiannual status reports, General Instrument Corporation ("GI") and Scientific-Atlanta, Inc. ("S-A") had also signed the letter which was sent to NCTA's President and was submitted for the record in this proceeding. For that reason, GI, S-A and NCTA are also signing this Status Report to reflect their continuing commitments to the OpenCable™ effort and timetable.

[10] Id.

In our first report, we cited concerns expressed by the Motion Picture Association of America and others that an encryption scheme should be adopted to provide protection of digital content across the interface between the module and the host device. Since the filing of the last report, such a specification has been advanced within a working group of the SCTE Digital Video Subcommittee ("DVS"). Of course, the use of content protection technology is subject to developing an acceptable licensing program and appropriate licensing agreements. The cable industry has adopted a suitable encryption solution as an OpenCable™ specification and intends to build to this specification for the development of the POD in order to meet the July 1, 2000 Commission requirement. In parallel, the cable industry will work with SCTE and its members for the standardization of this specification.

With respect to the only milestone occurring between our January Status Report and this filing, we are pleased to report that a preliminary digital security module prototype has been completed -- an event that was accomplished by the June 15, 1999 milestone cited in the Report and Order.

Other activities demonstrate the steady progress being made by the OpenCable™ effort. For example, in the spring of 1999, CableLabs signed an agreement with News Corporation subsidiary NDS Americas Inc. for the building of test tools by NDS. These tools will help set-top manufacturers make sure that their OpenCable™ set-tops are compatible with the POD module. Upon the signing of the NDS agreement, the Director of NDS conditional access initiatives said: "Testing and certifying the confirmation to

open POD standards will allow the proliferation of the next generation of open and interoperable digital boxes in the retail market."[11]

These test tools are part of a suite of test tools being developed by CableLabs and vendor partners. The suite includes:

SCM Test Tool: Tests the POD interface on an OpenCable™ host;

NDS Test Tool. Provides scripting capabilities to send and analyze messages exchanged over the POD module interface;

TeraLogic Cougar: Used as a test platform to interface with a POD module.

The test tools complement significant investment by CableLabs in new laboratory facilities in preparation for the upcoming OpenCable™ interoperability testing. Installation of this equipment began in April, 1999 and will be ready when testing begins.

In addition, in March of 1999, an RFI was prepared and issued to the vendor community seeking suppliers of POD modules. This RFI resulted in responses from eight companies requesting participation in the first phase of POD interoperability testing which will begin this month. This response means that six different POD suppliers are participating, achieving a primary goal of the Commission and the OpenCable™ process in bringing forth new suppliers of navigation device technology. These six suppliers are:

General Instrument;
Mindport;
NDS/SCM Microsystems;
Philips;
Pioneer/Nagra/SCM Microsystem; and
Scientific-Atlanta

---

[11] Cableday, "CableLabs Taps NDS for Test Suite," May 18, 1999 at 2. See also Cable World, "CableLabs To Use NDS Testing Technology," May 24, 1999 at 43.

Finally, there are now over 362 different companies registered to participate in the OpenCable™ process. This is up from 263 registered at the time of the last Status Report to the Commission. The list includes a wide variety of consumer electronics manufacturers, retailers and competitive service providers.

ANALOG SEPARATION SPECIFICATIONS

In addition to requiring the separation of security from non-security functions in digital navigation devices, the Commission, over the objection of the cable industry and others, ordered that the separation requirement also be applied to analog set-top boxes and hybrid boxes with both analog and digital descrambling functions. The deadline by which time cable operators had to have available security modules to descramble analog programming in either analog-only or hybrid boxes was also set at July, 2000. Because the OpenCable™ project had not addressed the separation of analog security functions or perhaps because of the practical, technical and legal complications associated with achieving such a result, no interim milestones were included in the Report and Order regarding the development of specifications for a security module to unscramble analog programming. As the Commission was aware when it adopted the Report and Order, the OpenCable™ effort had been focused on the digital set-top, consistent with the Commission goal to foster migration from analog to digital services.

The "Duplicated Analog" Exemption Proposal. In August, 1998, NCTA filed a Petition for Expedited Reconsideration asking the Commission to revisit the requirement that security be separated from non-security functions in analog boxes and hybrid boxes where the scrambled analog programming is duplicated on the operator's digital tier(s).

In response to NCTA's Petition, the Commission, in its recent Reconsideration Order in this proceeding, excluded "analog-only" devices -- but not "hybrid" boxes -- from the separate security requirement.[12] It did not adopt the "duplicated analog" exemption either.

While the exemption of analog-only boxes was welcomed by the cable industry, it still left for resolution the means by which analog security functions could be separated in so-called "hybrid" boxes -- those which descramble analog as well as digital programming.

The cable industry has argued that requiring separate analog security devices where scrambled analog programming is simultaneously carried on an operator's digital tier(s) is unnecessary.[13] A number of cable operators intend to provide just such "duplicated analog" programming when they deploy their digital boxes. In such circumstances, if a cable operator has sufficient capacity to duplicate its scrambled analog programming on a digital tier, subscribers who have a digital set-top box will not need a hybrid digital/analog set-top box with analog descrambling capabilities because all programming which is available in the scrambled analog format will also be duplicated in digital form.

It is unlikely that there will be any market for hybrid digital/analog set-top boxes sold at retail for use in systems where scrambled analog programming is duplicated on an operator's digital tier(s) because the analog portion of such set-top boxes would have no practical use. Any scrambled service available in analog form would also be available in

---

12 Order on Reconsideration Order at ¶ 14.

13 See NCTA Petition at 16-17.

digital form. As noted above, the Commission did not adopt this proposed exemption in its Order on Reconsideration.

The Market For "Hybrid" Boxes. The only market segment where a hybrid digital/analog set-top box may have any utility is where an operator does not duplicate his scrambled analog programming on a digital tier and where subscribers take both digital services and scrambled analog services. Since this is expected to be a very small, shrinking, and temporary market segment, production of hybrid boxes which accommodate a separable analog security module is not likely to be economically feasible. It is indeed arguable that this market segment by itself cannot justify the non-recurring engineering costs to design a hybrid digital/analog set-top box to accommodate a separate analog security "POD" module.

In sum, there is essentially no market for a hybrid digital/analog set-top box with separable analog security, and development of such equipment is not "reasonably feasible."[14] To be competitive, any set-top box sold at retail cannot support the extra cost of an analog processing section. Only digital set-top boxes have any hope of becoming price competitive. Nonetheless, to comply with the Commission's current rules, a mechanism for developing the analog equivalent of the digital POD module and POD module interface is required for use in hybrid boxes. We now address that issue.

The EIA 105.1 Standard. The cable and consumer electronics industries have completed the so-called "Decoder Interface" in response to legislation initiated by Senator

---

[14] See Order on Reconsideration, Appendix C ("Supplemental Final Regulatory Flexibility Analysis") at Section E ("An MVPD is not subject to the rules requiring the commercial availability of navigation devices if: (1) it is not reasonably feasible to separate conditional access functions from other functions.").

Leahy and included in the 1992 Cable Act.[15] Some testing remains before the standard can be implemented. In addition, its practicality,[16] if not its legality if imposed by the FCC,[17] is open to some debate. Nevertheless, we believe it may be able to serve as the basis for addressing the analog separate security requirement imposed by the Commission in this proceeding.

The Decoder Interface Standard consists of two parts, EIA- 105.1, issued in 1997 and EIA-105.2, published in 1998. The Commission has been apprised of these developments.[18] EIA-105.1 is called the "Decoder Interface Standard" and defines the electrical and mechanical characteristics of a twenty-six pin connector intended for television receivers, VCRs, and set-top boxes. A mating decoder allows descrambling to occur externally in a cable operator-supplied module. EIA-105.2 is called the "Decoder Interface Control Standard" and defines the minimum protocol necessary for the Decoder Interface to serve as a bus connecting multiple receiving and decoding devices to satisfy the requirements of the Leahy amendment.

---

15 See 47 U.S.C. §544a; Implementation of Section 17 of the Cable Television Consumer Protection and Competition Act of 1992: Compatibility Between Cable Systems and Consumer Electronics Equipment, ET Docket No. 93-7, First Report and Order, 9 FCC Rcd 1981 (1994).

16 See Circuit City Stores, Inc. Opposition to Petitions for Reconsideration, CS Docket No 97-80, filed September 23, 1998 at 18 ("The Decoder Interface alternative developed (as NCTA recognizes) for a different purpose and fast becoming an orphan in terms of potential implementation, should be put to rest insofar as this proceeding is concerned.")

17 See Echelon Ex Parte Communication in CS Docket No. 97-80; ET Docket No. 93-7, June 5, 1998 at 1-2; Echelon Corp. v. FCC, Case No. 98-1423, filed September 14, 1998 (D.C. Cir.).

18 See Letter from George Hanover, Vice President Engineering, CEMA, to Alan Stillwell, Economic Advisor, FCC Office of Engineering and Technology, November 11, 1997; Summary of Final Agreement on Cable Ready Television Receivers by the Cable-Consumer Electronics Compatibility Advisory Group (C3AG), Notice of Ex Parte Presentation, ET Docket No. 93-7, March 1, 1997; and Letter from Andy Scott, Director of Engineering, NCTA and George Hanover, Vice President Engineering, CEMA to Alan Stillwell, March 26, 1998.

Minimal testing of the Decoder Interface standard would require the construction of prototype products. If this effort were given a high priority, the construction would take at least nine months for prototype construction, followed by three rounds of tests. The tests would be conducted at three-month intervals. This work would obviously divert time, money and resources from the ongoing research and development efforts of CableLabs and others focusing on digital equipment and services.

As the Commission was advised in NCTA's Petition for Expedited Reconsideration, employing the Decoder Interface will result not only in a costly addition to the OpenCable™ boxes, but also it would be a decidedly "consumer unfriendly" device. As was explained in NCTA's Petition:

> [A]pplication of the Commission's "separate security" requirements to analog [including "hybrid"] boxes would result in a consumer's nightmare. The commercially available navigation device would be connected to the separate security device via the decoder interface, which looks like an umbilical cord. There may be some features in the commercial navigation device that the consumer might use, but for all practical purposes, its primary function will be to tune the desired cable channel and pass the analog signals to the operator's separate security device for its use. . . . [T]he end result is not, to say the least, consumer friendly.[19]

In addition, as NCTA urged in its Petition, if the proposed NCTA "analog exclusion" (including the "duplicated analog" exemption) were not to be adopted -- as it was not -- the Commission should revise its timetable for having analog separate security modules for hybrid boxes since the July 2000 deadline was based on the OpenCable™

---

[19] NCTA Petition at n. 26.

digital timetable.[20] The Commission failed to address this issue in its Order on Reconsideration.

Nevertheless, CableLabs has been working to develop a means to satisfy the FCC's analog separation requirement. The only potentially feasible approach for accomplishing this is to use the existing EIA-105 Decoder Interface Standard as a basis for an optional OpenCable™ specification. That conclusion was reached with much thought and hesitation because, as the cable industry as well as others have said in this proceeding,[21] the Decoder Interface standard was adopted to serve an entirely different function. But, having concluded that the Decoder Interface standard provides the only basis upon which to produce an analog security module in anywhere near the time frame required by the Commission, the next issue was whether to adopt that standard in toto as an OpenCable™ specification or to modify it in some way so that only the functions required for analog separation in navigation devices would be included.

If the entire existing EIA-105 standard were to be adopted as an optional OpenCable™ specification to address the analog separation requirement in hybrid boxes, its incorporation into the host interface box available at retail would be exceedingly difficult to accomplish in the July, 2000 timeframe. Moreover, it is highly unlikely that the separate security "module" can be made available by July, 2000. As noted above, work on the Decoder Interface was halted before the construction of a prototype and before any comprehensive testing had been undertaken. Even if testing could be

---

20 Id. at n. 37.

21 See NCTA Petition at 11 and note 25; Circuit City Opposition to Petitions for Reconsideration at 18.

completed in time for a July, 2000 commercial production of the separate security module, production of such a device will be expensive, including as it does functions (including the EIA-105.2 protocol) not necessary for only separating the security from the non-security analog functions in a hybrid box. Moreover, given the small expected demand for such a module, economies of scale will be absent.

For those reasons, a scaled-down or abridged EIA-105 standard, containing only the functions required to separate analog security from non-security functions (and not the full EIA-105.2 structure and other functions addressing the Leahy amendment) has been examined. Using such a "subset" of the existing standard could reduce considerably the cost of creating such a separate analog security "module."

However, what is gained in cost by following such an approach most certainly would be lost in the time to bring such a module and its interface to the market. To "trim down" the existing standard, an intense inter-industry effort would be needed, with input from all affected parties. This would further detract from the OpenCable™ digital navigation device effort.

To develop an abridged Decoder Interface Standard, it will be necessary to analyze it for the minimum configuration that would support a direct connection between a decoder and a set-top box. That is, a set-top box will have an abridged version of the Decoder Interface which will accept a single external decoder. Developing such an abridged Decoder Interface Standard would require beginning the standardization process anew. In addition, once a standard is adopted, prototype production and testing would also be required.

Validating the timing concerns NCTA expressed in its Petition, CableLabs has confirmed that there is simply no possibility of meeting the Commission's July 2000 deadline for analog separate security modules if a modified Decoder Interface standard is employed to achieve that goal. Nevertheless, significant costs would be avoided -- for manufacturers, retail outlets, cable operators and, most important, for the consumer -- if the abridged approach is pursued.

Under that scenario, the abridged Decoder Interface would become an optional part of OpenCable.™ A manufacturer of an OpenCable™ hybrid set-top box could choose whether or not to include the abridged Decoder Interface in such a box. CableLabs would conduct compliance testing of the abridged Decoder Interface for hybrid digital/analog set-top boxes. Digital set-top boxes without analog conditional access would not have to include the modified Decoder Interface.

Even though standardization, construction and testing of an abridged Decoder Interface cannot possibly be accomplished anywhere near the Commission's July, 2000 deadline, because of the considerations discussed above, CableLabs will continue to examine its use to address the analog separate security requirement.

CONCLUSION

The OpenCable™ effort has met or exceeded the milestones previously submitted to the Commission. Those milestones addressed only the digital POD and host interface. Issues raised by the analog separation requirement for so-called "hybrid" boxes are being addressed. Nevertheless, it appears highly unlikely that the July 2000 deadline -- which

was never intended by CableLabs to be a milestone for analog separate security devices – will be met with respect to analog separate security requirements.

The addition of the requirement to handle analog conditional access in a hybrid digital/analog set-top has already diverted significant resources from the original OpenCable™ effort. An augmented OpenCable™ specification to accommodate the analog separate requirement can include either the complete EIA-105 standard or an abridged standard.

Once again we believe the efforts and resources expended to address the analog separate security problem in hybrid boxes are not worth the candle. As noted above, the market for a hybrid digital/analog set-top box with separable analog security will either be non-existent at worst, or temporary and minuscule at best, particularly where a cable operator duplicates any scrambled analog programming on his digital tier(s). Substantial time and resources will have to be diverted from the digital effort to chasing a result which is not likely to be implemented for sound economic and market-driven reasons.

It is not likely that the nonrecurring engineering costs of designing the analog portion of a hybrid digital/analog set-top box with separable analog security will be recoverable. It is not possible for such a device to be cost competitive with a digital-only set-top box. Therefore, it is unlikely that such a product will be made available by manufacturers supplying the retail marketplace. Nevertheless, to satisfy the Commission's current requirements, the cable industry through the OpenCable™ project will continue to examine the development of specifications for an optional separate security module and host interface for analog conditional access in hybrid boxes based on the EIA-105 standard.

We will report on the progress of the industry's efforts on these and other issues in the next semiannual report.

Respectfully submitted,

AT&T BROADBAND & INTERNET SERVICES (formerly TCI COMMUNICATIONS)

By:_____

TIME WARNER CABLE

By:_____

JONES INTERCABLE

By:_____

MEDIAONE GROUP

By:_____

CHARTER COMMUNICATIONS, INC. (formerly MARCUS CABLE)

By:_____

ADVANCE/NEWHOUSE COMUNICATIONS

By:_____

COX COMMUNICATIONS

By:_____

COMCAST CABLE COMMUNICATIONS

By:_____

NATIONAL CABLE TELEVISION ASSOCIATION

July 7, 1999

By:_____

We will report on the progress of the industry's efforts on these and other issues in the next semiannual report.

Respectfully submitted,

AT&T BROADBAND & INTERNET SERVICES (formerly TCI COMMUNICATIONS)

By:_____

TIME WARNER CABLE

By:_____

JONES INTERCABLE

By:_____

MEDIAONE GROUP

By:_____

CHARTER COMMUNICATIONS, INC. (formerly MARCUS CABLE)

By:_____

ADVANCE/NEWHOUSE COMUNICATIONS

By:_____

COX COMMUNICATIONS

By:_____

COMCAST CABLE COMMUNICATIONS

By:_____

NATIONAL CABLE TELEVISION ASSOCIATION

July 7, 1999

By:_____

We will report on the progress of the industry's efforts on these and other issues in the next semiannual report.

Respectfully submitted,

AT&T BROADBAND & INTERNET SERVICES (formerly TCI COMMUNICATIONS)

By:_____

TIME WARNER CABLE

By:_____

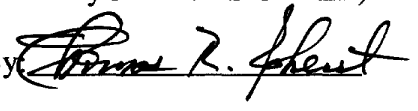
JONES INTERCABLE

By:_____

MEDIAONE GROUP

By:_____

CHARTER COMMUNICATIONS, INC. (formerly MARCUS CABLE)

By: 

ADVANCE/NEWHOUSE COMUNICATIONS

By:_____

COX COMMUNICATIONS

By:_____

COMCAST CABLE COMMUNICATIONS

By:_____

NATIONAL CABLE TELEVISION ASSOCIATION

By:_____

July 7, 1999

We will report on the progress of the industry's efforts on these and other issues in the next semiannual report.

Respectfully submitted,

AT&T BROADBAND & INTERNET SERVICES (formerly TCI COMMUNICATIONS)

By:_____

TIME WARNER CABLE

By:_____

JONES INTERCABLE

By:_____

MEDIAONE GROUP

By:_____

CHARTER COMMUNICATIONS, INC. (formerly MARCUS CABLE)

By:_____

ADVANCE/NEWHOUSE COMUNICATIONS

By:_____

COX COMMUNICATIONS

By:_____

COMCAST CABLE COMMUNICATIONS

By:_____

NATIONAL CABLE TELEVISION ASSOCIATION

July 7, 1999

By:_____

We will report on the progress of the industry's efforts on these and other issues in the next semiannual report.

Respectfully submitted,

AT&T BROADBAND & INTERNET SERVICES (formerly TCI COMMUNICATIONS)

By:_____

TIME WARNER CABLE

By: JAMES A. CHIDDIX

JONES INTERCABLE

By:_____

MEDIAONE GROUP

By:_____

CHARTER COMMUNICATIONS, INC. (formerly MARCUS CABLE)

By:_____

ADVANCE/NEWHOUSE COMUNICATIONS

By: JAMES A. CHIDDIX

COX COMMUNICATIONS

By:_____

COMCAST CABLE COMMUNICATIONS

By:_____

NATIONAL CABLE TELEVISION ASSOCIATION

July 7, 1999

By:_____

We will report on the progress of the industry's efforts on these and other issues in the next semiannual report.

Respectfully submitted,

AT&T BROADBAND & INTERNET SERVICES (formerly TCI COMMUNICATIONS)

By:_____

TIME WARNER CABLE

By:_____

JONES INTERCABLE

By:_____

MEDIAONE GROUP

By: Janice C Peter
By

CHARTER COMMUNICATIONS, INC. (formerly MARCUS CABLE)

By:_____

ADVANCE/NEWHOUSE COMUNICATIONS

By:_____

COX COMMUNICATIONS

By:_____

COMCAST CABLE COMMUNICATIONS

By:_____

NATIONAL CABLE TELEVISION ASSOCIATION

July 7, 1999

By:_____

We will report on the progress of the industry's efforts on these and other issues in the next semiannual report.

Respectfully submitted,

AT&T BROADBAND & INTERNET SERVICES (formerly TCI COMMUNICATIONS)

By:_____

TIME WARNER CABLE

By:_____

JONES INTERCABLE

By:_____

MEDIAONE GROUP

By:_____

MARCUS CABLE

By:_____

ADVANCE/NEWHOUSE COMUNICATIONS

By:_____

COX COMMUNICATIONS

By:_____

COMCAST CABLE COMMUNICATIONS

By:_____

NATIONAL CABLE TELEVISION ASSOCIATION

July 7, 1999

By:_____

N:\DEPTLG\NGOLDBER\July7_99_Navigation Devices.doc

We will report on the progress of the industry's efforts on these and other issues in the next semiannual report.

Respectfully submitted,

AT&T BROADBAND & INTERNET SERVICES (formerly TCI COMMUNICATIONS)

By:_____

TIME WARNER CABLE

By:_____

JONES INTERCABLE

By:_____

MEDIAONE GROUP

By:_____

CHARTER COMMUNICATIONS, INC. (formerly MARCUS CABLE)

By:_____

ADVANCE/NEWHOUSE COMUNICATIONS

By:_____

COX COMMUNICATIONS

By:_____

COMCAST CABLE COMMUNICATIONS

By:_____

NATIONAL CABLE TELEVISION ASSOCIATION

By:_____

July 7, 1999

GENERAL INSTRUMENT CORPORATION

By: Edward D. Breen

SCIENTIFIC-ATLANTA, INC.

By: _____

GENERAL INSTRUMENT CORPORATION

By: _____

SCIENTIFIC-ATLANTA, INC.

By: James McDaniel